

Claims

1. A process for the production of a frozen vegetable or part thereof, wherein said process comprises the steps of:

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(i) subjecting a vegetable or part thereof to a firming treatment selected from:

a) immersing the vegetable or part thereof in a solution of a calcium salt.

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b) heating the vegetable or part thereof to a temperature in the range about 50 to about 70 °C, and

c) a combination of a) and b);

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(ii) under-cooling said vegetable or part thereof to a core temperature of less than or equal to -5°C;

(iii) reducing the temperature to less than or equal to -18°C.

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2. A process according to claim 1 wherein said calcium salt is a member selected from the group consisting of calcium chloride, calcium sulphate, calcium citrate, calcium monophosphate and mixtures thereof.

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3. A process according to claim 2 wherein said solution of calcium salt comprises from 0.1 to 10% calcium.

4. A process according to claim 3 wherein said solution of calcium salt comprises about 1% calcium.

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5. A process according to claim 3 wherein said vegetable or part thereof is immersed in the solution of calcium salt for a period of from 2 to 30 minutes.

5 6. A process according to claim 1 wherein said vegetable or part thereof is heated to a temperature of from about 50 to about 70°C for a period of from about 2 to about 30 minutes.

7. A process according to claim 6 wherein said temperature
10 is about 65°C.

8. A process according to claim 1 wherein said firming treatment comprises immersing the vegetable or part thereof in a solution of calcium salt at ambient temperature and
15 immersing the vegetable or part thereof in an aqueous solution at a temperature of from about 50 to about 70 °C (with or without calcium salt being present) in either order.

9. A process according to claim 8 wherein said firming
20 treatment comprises the steps of:

immersing said vegetable or part thereof in a solution of calcium salt at ambient temperature for a period of from about 2 to about 30 minutes; thereafter

immersing the vegetable or part thereof in a solution of
25 calcium salt at a temperature of from about 50 to 70 °C for a period of from 2 to 30 minutes, and

optionally immersing the vegetable as part thereof in a solution of calcium salt for a period of from 2 to about 30 minutes.

10. A process according to claim 1 wherein at least 40% of ice formation within the core of said vegetable or part thereof in step (iii) occurs within a plurality of cellular structures, wherein the perimeter of each cellular structure
5 is defined by a cell wall.

11. A process according to claim 1 wherein said vegetable or part thereof is a member selected from the group consisting of potato, swede, turnip, pumpkin, onion, broccoli, tomato,
10 zucchini, aubergine, water chestnut, pepper, mushroom, peas, sugar-snap peas, spinach, green beans, carrot and mange tout.

12. A process according to claim 11 wherein said vegetable or part thereof is tomato.
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13. A process according to Claim 11 wherein said vegetable or part thereof is potato or carrot.

14. A frozen vegetable obtained by a process which comprises
20 the steps of:

(i) subjecting a vegetable or part thereof to a firming treatment selected from:

- a) immersing the vegetable or part thereof in a solution of a calcium salt.
- 25 b) heating the vegetable or part thereof to a temperature in the range about 50 to about 70 °C, and
- c) a combination of a) and b);

30 (ii) under-cooling said vegetable or part thereof to a core temperature of less than or equal to -5°C;

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(iii) reducing the temperature to less than or equal to
-18°C.

15. A frozen meal comprising a vegetable or part thereof as
5 defined in claim 14.

16. Use of a vegetables as claimed in claim 14 in a frozen
meal.